

DEVICES, METHODS AND SYSTEMS FOR WIRELESS CONTROL OF MEDICAL DEVICES

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application is a Continuation of U.S. patent application Ser. No. 14/236,381, filed on Jan. 31, 2014 and entitled Devices, Methods and Systems for Wireless Control of Medical Devices, now U.S. Pat. No. 10,238,794, issued Mar. 26, 2019 (Attorney Docket No. K11), which is a U.S. 371 International Application of PCT Application Serial No. PCT/US12/71280 filed on Dec. 21, 2012 and entitled Devices, Methods and Systems for Wireless Control of Medical Devices (Attorney Docket No. K11WO), which is a continuation-in-part of U.S. patent application Ser. No. 13/332,896, filed on Dec. 21, 2011 and entitled Devices, Methods and Systems for Wireless Control of Medical Devices, now U.S. Pat. No. 9,662,438, issued May 30, 2017 (Attorney Docket No. 198), each of which is herein incorporated by reference in its entirety.

TECHNICAL FIELD

[0002] The present disclosure relates to medical devices and more particularly, to a system for controlling at least one medical device.

BACKGROUND INFORMATION

[0003] Many potentially valuable medicines or compounds, including biologicals, are not orally active due to poor absorption, hepatic metabolism or other pharmacokinetic factors. Additionally, some therapeutic compounds, although they can be orally absorbed, are sometimes required to be administered so often it is difficult for a patient to maintain the desired schedule. In these cases, parenteral delivery is often employed or could be employed.

[0004] Effective parenteral routes of drug delivery, as well as other fluids and compounds, such as subcutaneous injection, intramuscular injection, and intravenous (IV) administration include puncture of the skin with a needle or stylet. Insulin is an example of a therapeutic fluid that is self-injected by millions of diabetic patients. Users of parenterally delivered drugs may benefit from a wearable device that would automatically deliver needed drugs/compounds over a period of time.

[0005] To this end, there have been efforts to design portable and wearable devices for the controlled release of therapeutics. Such devices are known to have a reservoir such as a cartridge, syringe, or bag, and to be electronically controlled. These devices suffer from a number of drawbacks including the malfunction rate. Reducing the size, weight and cost of these devices is also an ongoing challenge. Additionally, these devices often apply to the skin and pose the challenge of frequent re-location for application.

[0006] Managing multiple medical devices simultaneously for a single user presents challenges. One includes the hardware, for many medical devices include a designated interface and with respect to medical devices that are wirelessly controlled, multiple “controllers” or “hand holds” present logistical challenges. Firstly, the variety of interfaces may be difficult to transfer attention from one to another and to master. Secondly, recharging multiple devices may pres-

ent a challenge and thirdly, carrying the multiple controllers, together with the medical devices, presents challenges.

SUMMARY

[0007] In accordance with one aspect of the present invention, a medical device system is disclosed. The medical device system includes a first medical device and a second medical device. The system also includes a remote interface including a touch screen. The remote interface is in wireless communication with the first medical device and the second medical device. The remote interface is configured to provide a user interface to the first medical device and the second medical device. The remote interface is configured to receive user input through a touch screen. Also, a charging device is included. The charging device is configured to receive at least the first medical device and the remote interface and the charging device is configured to recharge a first medical device battery and the charging device is configured to recharge an interface battery in the remote interface. The charging device is connected to a personal computer wherein the personal computer provides information to the remote interface.

[0008] Some embodiments of this aspect of the invention may include one or more of the following. Wherein the first medical device is an infusion pump; wherein the first medical device further includes at least one disposable portion and at least two reusable portions, each of the two reusable portions configured to connect to the at least one disposable portion; wherein the charging device is configured to receive at least one of the at least two reusable portions of the first medical device; wherein the second medical device is a continuous glucose monitor system comprising at least one transmitter wherein the at least one transmitter in wireless communication with the remote interface; wherein the system further includes a third medical device in wireless communication with the remote interface; wherein the remote interface configured to provide a user interface to the third medical device; wherein the third medical device is at least one blood glucose meter; wherein the system further includes wherein the wireless communication is radio frequency communication; wherein the first medical device and the remote interface are paired using near field communication; and/or wherein the remote interface further comprising at least one camera.

[0009] In accordance with one aspect of the present invention, a medical device system is disclosed. The medical device system includes a first medical device and a second medical device, in wireless communication with the first medical device. The system also includes a remote interface including a touch screen. The remote interface is in wireless communication with the first medical device and the remote interface is configured to provide a user interface to the first medical device and the second medical device. The remote interface is configured to receive user input through a touch screen. The system also includes a charging device configured to receive the first medical device and the remote interface. The charging device configured to recharge a first medical device battery, and the charging device is configured to recharge an interface battery in the remote interface. The charging device is connected to a personal computer wherein the personal computer provides information to the remote interface.

[0010] Some embodiments of this aspect of the invention may include one or more of the following. Where the first